

IN THE CLAIMS:

Please amend Claims 1, 6, 11 and 12 as shown below. The claims, as pending in the subject application, now read as follows:

1. (Currently amended) A data conversion method of performing image processing on image data expressed in plural components by using a multi-dimensional look-up table, and outputting processed image data, comprising the steps of:

setting grid positions of the multi-dimensional look-up table which has grids arranged at non-uniform intervals;

generating a weight table to store weight values corresponding to the plural components based on the set grid positions, wherein the weight values are calculated by an integer computation, and are multiplied by a constant which is a large value greater than a value corresponding to a maximum interval of the grids;

obtaining the weight values corresponding to the plural components of input image data by referring to the weight table;

obtaining output data of grid points of the multi-dimensional look-up table which corresponds to the input image data;

calculating the processed image data, which corresponds to the input image data, by interpolation using the obtained output data, [[and]] the obtained weight values and the constant, wherein the interpolation is executed by an integer computation[[;]] and uses the normalizing the process of calculating and obtaining the weight values and the interpolation by a sufficiently large value which is a constant as a divisor greater than a value corresponding to a maximum interval of the grids.

2. (Canceled)

3. (Currently Amended) The method according to claim 1, wherein the sufficiently large value the value of the constant is a power of 2.

4. (Previously presented) The method according to claim 1, wherein the grid points are set in non-uniformity, and the grid positions corresponding to each of the components are set the same.

5. (Previously presented) The method according to claim 1, wherein the input image data is expressed in one of RGB, CMY, and XYZ color spaces.

6. (Currently amended) A data conversion apparatus for performing image processing on image data expressed in plural components by using a multi-dimensional look-up table, and outputting processed image data, comprising:

a setting section, arranged to set grid positions of the multi-dimensional look-up table which has grids arranged at non-uniform intervals;

a generator, arranged to generate a weight table to store weight values corresponding to the plural components based on the set grid positions, wherein the weight values are calculated by an integer computation, and are multiplied by a constant which is a large value greater than a value corresponding to a maximum interval of the grids;

a first obtaining section, arranged to obtain the weight values corresponding to the plural components of input image data by referring to the weight table;

a second obtaining section, arranged to obtain output data of grid points of the multi-dimensional look-up table which corresponds to the input image data; and

a computation section, arranged to calculate the processed image data, which corresponds to input image data, by interpolation using the obtained output data and the obtained weight values and the constant, wherein the interpolation is executed by an integer computation[[;]] and uses the a normalizing section, arranged to normalize the process of calculating and obtaining the weight values and the interpolation by a sufficiently large value which is a constant as a divisor greater than a value corresponding to a maximum interval of the grids.

7. to 10. (Canceled)

11. (Currently amended) A computer program product storing a computer readable medium having a computer program code, for a data conversion method of performing image processing on image data expressed in plural components by using a multi-dimensional look-up table, and outputting processed image data, the product comprising process procedure codes for:

setting grid positions of the multi-dimensional look-up table which has grids arranged at non-uniform intervals;

generating a weight table to store weight values corresponding to the plural components based on the set grid positions, wherein the weight values are calculated by an integer computation, and are multiplied by a constant which is a large value greater than a value corresponding to a maximum interval of the grids;

obtaining the weight values corresponding to the plural components of input image data by referring to the weight table;

obtaining output data of grid points of the multi-dimensional look-up table which corresponds to the input image data; and

calculating the processed image data, which corresponds to the input image data, by interpolation using the obtained output data and the obtained weight values, wherein the interpolation is executed by an integer computation[[;]] and uses the normalizing the process of calculating and obtaining the weight values and the interpolation by a sufficiently large value which is a constant as the divisor greater than a value corresponding to a maximum interval of the grids.

12. (Currently amended) A computer readable medium storing recorded data which is used in data conversion processing to process image data expressed in plural components by using a multi-dimensional look-up table, and to output processed image data, the recorded data comprising:

data for indicating grid positions of the multi-dimensional look-up table which has grids arranged at non-uniform intervals;

data for generating a weight table to store weight values corresponding to the plural components based on the set grid positions, wherein the weight values are calculated by an integer computation[[,]] and are multiplied by a constant which is a large value greater than a value corresponding to a maximum interval of the grids, and the weight table is used for obtaining the weight values corresponding to the plural components of input image data; and

data representing a computation for calculating the processed image data corresponding to the input image data by interpolation using output data of grid points of the multi-dimensional look-up table corresponding to the input image data, and the obtained weight values, wherein the interpolation is executed by an integer computation[[;]] and uses the data for normalizing the process of calculating and obtaining the weight values and the interpolation by a sufficiently large value which is a constant as a divisor greater than a value corresponding to a maximum interval of the grids.

13. to 23. (Canceled)